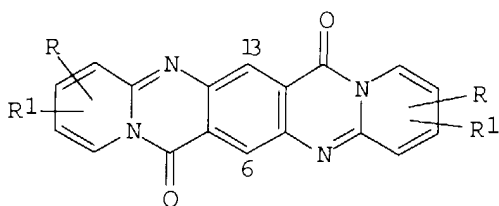


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L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1978:512276 CAPLUS
DOCUMENT NUMBER: 89:112276
TITLE: Studies on heterocyclic coloring matter. Part III.
7a,14a-Diaza-7,7a,14,14a-tetrahydroquino[2,3-
b]acridine-7,14-diones (5,7a,12,14a-tetraaza-
7,7a,14,14a-tetrahydropentacene-7,14-diones)
AUTHOR(S): Altiparmakian, Rodolf
CORPORATE SOURCE: Dyes Dep.-Dyes Chem. Res., Sandoz Ltd., Basel, Switz.
SOURCE: Helvetica Chimica Acta (1978), 61(3), 1146-57
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 89:112276
GI



AB The title compds. (I, R = H, Cl, Me; R2 = H, Cl) are prepared by reaction of 2-aminopyridine (II) [504-29-0] or derivative with di-Et 2,5-dioxocyclohexane-1,4-dicarboxylate [787-07-5] to give 7a,14a-diaza-6,7,7a,13,14,14a-hexahydroquino[2,3-b]acridine-7,14-dione [52000-69-8] or derivative followed by aromatization to the tetrahydro derivative [52000-72-3]. Oxidation of I

with

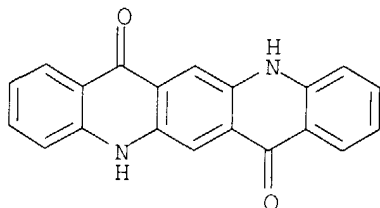
a mixture of H2SO4 and HNO3 results in the formation of their resp. 6,13-quinones, also obtained from II or derivs. and di-Et 2,5-dichloro-1,4-benzoquinone-3,6-dicarboxylate [2490-58-6]. The chromophore of I is compared with the quinacridone chromophore.

IT 1047-16-1

RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidation and nitration of)

RN 1047-16-1 CAPLUS

CN Quino[2,3-b]acridine-7,14-dione, 5,12-dihydro- (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 3933-16-2P

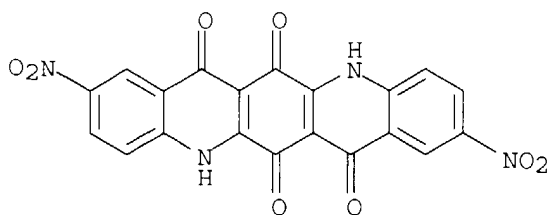
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 3933-16-2 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dinitro- (7CI, 8CI,

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9CI) (CA INDEX NAME)



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L4 ANSWER 1 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:140618 CAPLUS

DOCUMENT NUMBER: 132:182031

TITLE: Microwave syntheses of quinacridones, 6,13-dihydroquinacridones, and 6,13-quinacridonequinones

INVENTOR(S): Badejo, Ibraheem T.

PATENT ASSIGNEE(S): Bayer Corporation, USA

SOURCE: U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 933,459, abandoned.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6031100	A	20000229	US 1998-63128	19980420
CA 2246109	AA	19990318	CA 1998-2246109	19980828
EP 905199	A2	19990331	EP 1998-116840	19980907
EP 905199	A3	19991027		
EP 905199	B1	20020508		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11172137	A2	19990629	JP 1998-274242	19980911
PRIORITY APPLN. INFO.:			US 1997-933459	B2 19970918
			US 1998-63128	A 19980420

AB Quinacridone pigments are prepared by (a) exposing a reaction mixture containing

(i) 1 part 2,5-dianilinoterephthalic acid (I), 2,5-dianilino-3,6-dihydroterephthalic acid, 2,5-dianilino-3,6-dioxo-1,4-cyclohexadiene-1,4-dicarboxylic acid (II), and/or derivs. thereof, (ii) 3-20 parts of a dehydrating agent, and (iii) 0-20 parts of a pigment additive to microwave radiation under conditions that raise the bulk temperature of the reaction mixture

to .ltorsim.250°, with the proviso that if component i is a 2,5-dianilino-3,6-dihydroterephthalic acid or derivative thereof, reaction step a addnl. comprises an oxidation step; (b) drowning the reaction mixture in .apprx.3-15 parts of a liquid in which the quinacridone pigment is substantially insol.; (c) isolating the quinacridone pigment; and (d) optionally conditioning the pigment. Thus, a stirred solution of 30 g I and 20 g II in 300 g polyphosphoric acid at 80° was irradiated in a microwave oven (2450 MHz, 800 W) for 2.5 min, cooled to 150°, poured into 1.2 kg ice-water, filtered and washed to give 42.6 g of a

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solid solution of quinacridone and 6,13-quinacridonequinone.

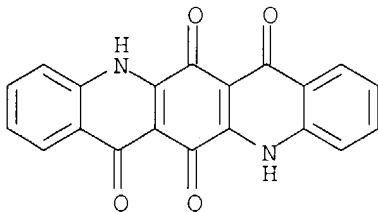
IT **1503-48-6P**

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)

(quinacridone pigment manufacture by use of microwave radiation)

RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:583339 CAPLUS

DOCUMENT NUMBER: 131:215655

TITLE: Preparation of quinacridone quinones by oxidation of quinacridones

INVENTOR(S): Funakura, Shoji; Sugiyama, Kazuhiro

PATENT ASSIGNEE(S): Dainippon Ink and Chemicals, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11246784	A2	19990914	JP 1998-49316	19980302
PRIORITY APPLN. INFO.:			JP 1998-49316	19980302

OTHER SOURCE(S): CASREACT 131:215655

AB Quinacridone quinones are prepared by oxidation of 6,13-dihydroquinacridones and/or quinacridones in solvents in which the starting materials are soluble but the products are insol. or slightly soluble. Thus, 30 g 6,13-dihydroquinacridone was oxidized by air in DMSO in the presence of NaOH at 60° for 8 h to give 25 g brown powder containing 90% quinacridone quinone.

IT **1503-48-6P**, Quinacridone quinone **2389-75-5P**

5791-64-0P

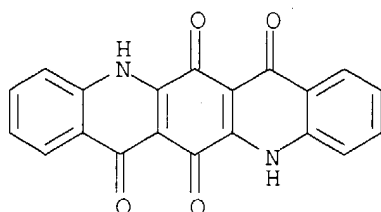
RL: SPN (Synthetic preparation); **PREP (Preparation)**

(preparation of quinacridone quinones by oxidation of quinacridones in basic aprotic polar solvents)

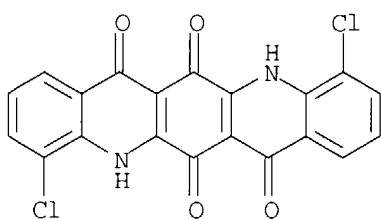
RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)

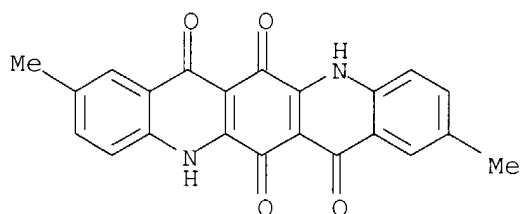
10/757,306



RN 2389-75-5 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 4,11-dichloro- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5791-64-0 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dimethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



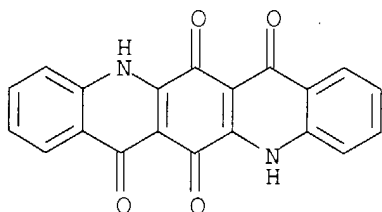
L4 ANSWER 3 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1999:34498 CAPLUS
DOCUMENT NUMBER: 130:111503
TITLE: Oxidation process for preparing quinacridone pigments
INVENTOR(S): Babler, Fridolin
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Corporation, USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5856488	A	19990105	US 1997-854235	19970509
PRIORITY APPLN. INFO.:			US 1997-854235	19970509
OTHER SOURCE(S):			CASREACT 130:111503; MARPAT 130:111503	
AB			Quinacridone pigments are obtained in their specific crystal forms by oxidizing a pre-milled 6,13-dihydroquinacridone corresponding to the	

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quinacridone pigment in a basic, aqueous reaction medium utilizing hydrogen peroxide as the oxidizing agent and an anthraquinone as the catalyst. The process is environmentally friendly and yields a polymorphically homogeneous product in excellent yield. In an example, 6,13-dihydroquinacridone containing Na 2-anthraquinonesulfonate is milled and then heated with aqueous KOH and H₂O₂ to give a red quinacridone pigment in the gamma-II form.

IT **1503-48-6DP**, Quinacridonequinone, solid solns. with quinacridone derivs.
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
(pigments; oxidation of dihydroquinacridones to quinacridone pigments)
RN 1503-48-6 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:742173 CAPLUS
DOCUMENT NUMBER: 129:344464
TITLE: Preparation of 2-anilinoacridones
INVENTOR(S): Gerzevske, Kevin Rodney; Jaffe, Edward Ephraim
PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
SOURCE: Eur. Pat. Appl., 12 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

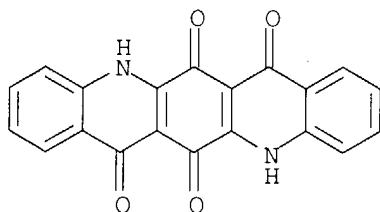
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 877021	A1	19981111	EP 1998-810386	19980430
EP 877021	B1	20010509		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
CA 2237077	AA	19981109	CA 1998-2237077	19980507
CN 1199046	A	19981118	CN 1998-107965	19980508
JP 10338674	A2	19981222	JP 1998-125475	19980508
US 6022970	A	20000208	US 1998-75002	19980508
PRIORITY APPLN. INFO.:			US 1997-59418P	P 19970509

OTHER SOURCE(S): CASREACT 129:344464; MARPAT 129:344464

AB An improved process for the preparation of optionally substituted 2-anilinoacridones from optionally substituted 2,5-dianilinoterephthalic acids comprises: (a) cyclizing 2,5-dianilinoterephthalic acid to give an intermediate product mixture which contains a major portion of a 2-anilino-3-carboxyacridone and a minor portion of a quinacridone; (b) combining said intermediate product mixture with a solvent which dissolves the 2-anilino-3-carboxyacridone at elevated temps. but does not dissolve

the quinacridone; (c) decarboxylating the 2-anilino-3-carboxyacridone in the mixture from step (b) at elevated temps. to yield a product slurry comprising a solid quinacridone and a 2-anilinoacridone dissolved in the solvent; (d) separating the solid quinacridone, the catalyst, and other solid impurities from the solvent, whereby a solution containing the dissolved 2-anilinoacridone is obtained; and (e) subsequently separating the dissolved 2-anilinoacridones (stabilizers for quinacridonequinone pigments) in high yield and purity. A process for the preparation of 2-anilinoacridone/quinacridonequinone high performance golden yellow pigments is also described. In an example, 2-anilino-3-carboxyacridone was prepared without removal of quinacridone byproduct and then decarboxylated to 2-anilinoacridone in 81% yield (purity >95%); with purification of the intermediate, the yield was only 73%.

IT **1503-48-6DP**, Quinacridonequinone, solid solns. with 2-anilinoacridone
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (yellow pigment; preparation of stabilized pigment compns.)
 RN 1503-48-6 CAPLUS
 CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1997:744017 CAPLUS
 DOCUMENT NUMBER: 127:359969
 TITLE: Oxidation process for preparing quinacridone pigments
 INVENTOR(S): Babler, Fridolin
 PATENT ASSIGNEE(S): Ciba Specialty Chemicals Holding Inc., Switz.
 SOURCE: Eur. Pat. Appl., 12 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

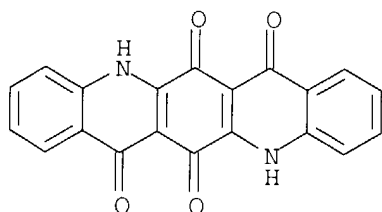
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 806456	A2	19971112	EP 1997-810271	19970501
EP 806456	A3	19980715		
EP 806456	B1	20010725		
R: CH, DE, FR, GB, IT, LI				
JP 10053712	A2	19980224	JP 1997-118543	19970509
PRIORITY APPLN. INFO.:			US 1996-17500P	P 19960510
OTHER SOURCE(S):	MARPAT 127:359969			

AB Quinacridone pigments are prepared in their specific crystal forms by oxidizing a premilled 6,13-dihydroquinacridone corresponding to the quinacridone pigment in a basic, aqueous reaction medium utilizing hydrogen

peroxide as the oxidizing agent. The inventive process is an environmentally friendly process which yields a polymorphically homogeneous product in excellent yield. In an example, 6,13-dihydroquinacridone was milled in the presence of anthraquinone-2-sulfonic acid NA salt and the mixture was oxidized in an aqueous

KOH suspension with H₂O₂ at 90° to provide a red quinacridone pigment with a gamma-II x-ray diffraction pattern.

IT **1503-48-6DP**, Quinacridone quinone, solid solns. with quinacridone
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (oxidation of dihydroquinacridones to quinacridone pigments)
 RN 1503-48-6 CAPLUS
 CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 6 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1996:30125 CAPLUS
 DOCUMENT NUMBER: 124:120257
 TITLE: Solid solutions of pyrrolo-[3.4-c]-pyrroles with quinacridonequinones
 INVENTOR(S): Hendi, Shivakumar B.; Kilmurry, Lindsay; Jaffe, Edward E.
 PATENT ASSIGNEE(S): Ciba-Geigy Corporation, USA
 SOURCE: U.S., 9 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5472496	A	19951205	US 1994-289167	19940811
TW 404972	B	20000911	TW 1995-84107628	19950724
EP 696620	A1	19960214	EP 1995-810496	19950804
EP 696620	B1	20000426		
R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL				
AU 9528400	A1	19960222	AU 1995-28400	19950804
AU 685960	B2	19980129		
ES 2145890	T3	20000716	ES 1995-810496	19950804
JP 08060020	A2	19960305	JP 1995-201910	19950808
CA 2155697	AA	19960212	CA 1995-2155697	19950809
BR 9503614	A	19960604	BR 1995-3614	19950810
PRIORITY APPLN. INFO.:			US 1994-289167	A 19940811

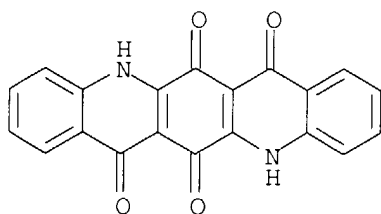
OTHER SOURCE(S): MARPAT 124:120257

AB The present invention relates to novel solid solns. which comprise a quinacridonequinone component, a pyrrolo[3,4-c]pyrrole component and an acridone component which is a 2-anilinoacridone, a 5,6,7,8-tetrahydro-2-anilinoacridone, 2-phenoxyacridone, a 5,6,7,8-tetrahydro-2-phenoxyacridone

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or a mixture thereof. The solid solns. are three component solid solns. which consist of the components identified above or are four component solid solns. which addnl. contain a quinacridone component. These solid solns. exhibit better light stability than phys. mixts. of the acridone component and a preformed solid solution of the quinacridonequinone and pyrrolo[3,4-c]pyrrole components. Pigment compns. containing the disclosed solid solns. and a method of pigmenting high mol. weight organic material such as paints with the solid solns. are also disclosed.

IT **1503-48-6DP**, Quinacridonequinone, solid solns. with pyrrolopyrrole derivs. and acridone derivs.
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); **PREP (Preparation)**; USES (Uses)
 (solid solns. of pyrrolopyrrole derivs. with quinacridonequinone and acridone derivs. and optionally quinacridone for pigments for paints)
 RN 1503-48-6 CAPLUS
 CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1992:153939 CAPLUS
 DOCUMENT NUMBER: 116:153939
 TITLE: Quinacridone dispersion milling process
 INVENTOR(S): Bauman, Donald L.
 PATENT ASSIGNEE(S): Ciba-Geigy Corp., USA
 SOURCE: U.S., 4 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5084100	A	19920128	US 1990-630704	19901220
EP 493308	A1	19920701	EP 1991-810733	19910916
EP 493308	B1	19960508		
R: BE, DE, ES, FR, GB, IT, NL				
ES 2087275	T3	19960716	ES 1991-810733	19910916
JP 04277564	A2	19921002	JP 1991-293521	19911111
JP 3026525	B2	20000327		

PRIORITY APPLN. INFO.: US 1990-630704 A 19901220

OTHER SOURCE(S): MARPAT 116:153939

AB Fine quinacridone pigments are prepared by milling the crude pigments in the presence of hydrated $Al_2(SO_4)_3$ and dicarboxylic acid esters $RO_2C(CH_2)_nCO_2R$ (R = C1-8 alkyl; n = 0-8) as crystallization solvents and removing the $Al_2(SO_4)_3$ and solvents. Thus, ball milling gamma-quinacridone crude 5, com. $Al_2(SO_4)_3$ 19.8 and a surfactant 0.25 kg in 0.25 kg di-iso-Pr succinate (I) at 40 rpm for 5.5 h, heating with 3% H_2SO_4 solution at 90-95° for 2 h, cooling to 70°, filtering, washing, drying, and pulverizing gave a

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pigment, conventionally which can be similarly prepared by milling in 0.7 kg C₂H₂Cl₄ instead of I for 7.5 h.

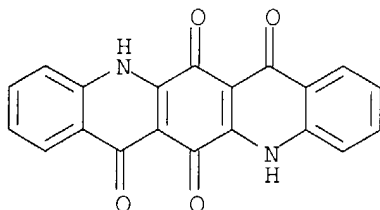
IT **1503-48-6P**, Quinacridonequinone

RL: **PREP (Preparation)**

(fine, manufacture of, by milling in dicarboxylate ester crystallizing solvents)

RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 8 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:152150 CAPLUS

DOCUMENT NUMBER: 108:152150

TITLE: Quinacridonequinone-series pigments for automobile lacquers

INVENTOR(S): Dietz, Erwin; Prokschy, Frank

PATENT ASSIGNEE(S): Hoechst A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 10 pp.

CODEN: GWXXBX

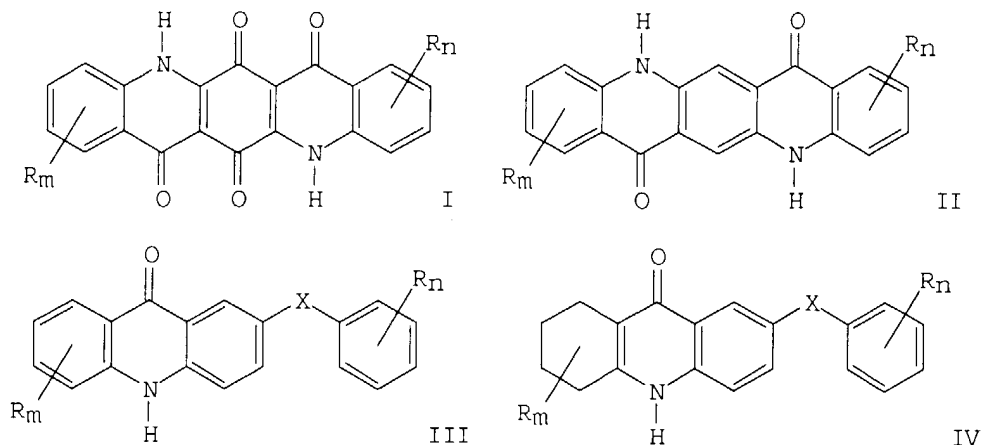
DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3623336	A1	19880121	DE 1986-3623336	19860711
EP 253276	A2	19880120	EP 1987-109767	19870707
EP 253276	A3	19910102		
EP 253276	B1	19930421		
R: CH, DE, FR, GB, IT, LI				
JP 63023969	A2	19880201	JP 1987-169924	19870709
JP 2511463	B2	19960626		
US 4881980	A	19891121	US 1987-71750	19870709
PRIORITY APPLN. INFO.:			DE 1986-3623336	19860711
OTHER SOURCE(S):	MARPAT	108:152150		
GI				



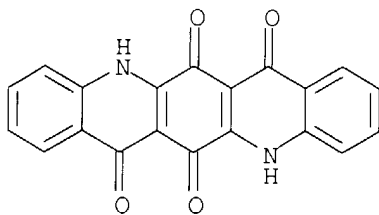
AB The title pigments comprise mixts. of I ($R = H, Cl, Me, CONH_2$; $m, n = 1, 2$) 98-20, II 1-65, and III ($X = O, NH$) and/or IV 1-15 mol%, in which II, III, and/or IV are incorporated in the crystal lattice of I (no data), are prepared, e.g., by treatment of I, II, and III and/or IV in an acid, and subsequent hydrolysis with water at $0-50^\circ$. The product is useful in automotive lacquers. Thus, quinacridonequinone 13.7, quinacridone 1.6, and 2-anilinoacridone 1.4 were dissolved in 140 parts 98% H_2SO_4 at 30° , the solution hydrolyzed in 1400 parts H_2O at 0° , and the obtained suspension heated for 2 h to 90° to give 16.1 parts golden yellow pigment with good light and weather stability.

IT **1503-48-6DP**, Quinacridonequinone, solid solns. with quinacridone and anilinoacridone **5791-64-0DP**, solid solns. with dimethylquinacridone and anilinoacridone

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(pigments, preparation of, for automobile lacquers)

RN 1503-48-6 CAPLUS

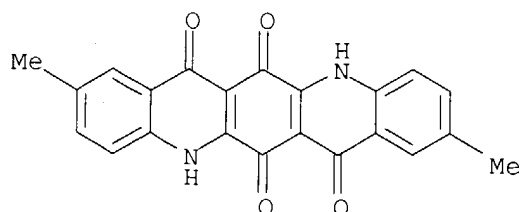
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5791-64-0 CAPLUS

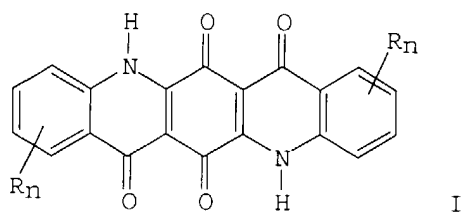
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dimethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)

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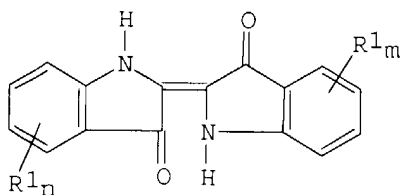


L4 ANSWER 9 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1988:152149 CAPLUS
DOCUMENT NUMBER: 108:152149
TITLE: Manufacture of green mixed-crystal pigments of the
quinacridonquinone series
INVENTOR(S): Spietschka, Ernst; Prokschy, Frank
PATENT ASSIGNEE(S): Hoechst A.-G., Fed. Rep. Ger.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 3623335	A1	19880121	DE 1986-3623335	19860711
DE 3623335	C2	19950420		
PRIORITY APPLN. INFO.:			DE 1986-3623335	19860711
OTHER SOURCE(S):	MARPAT	108:152149		
GI				



I

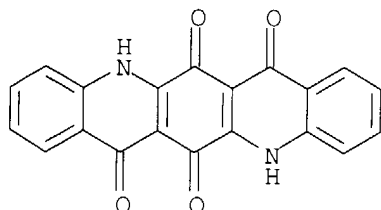


II

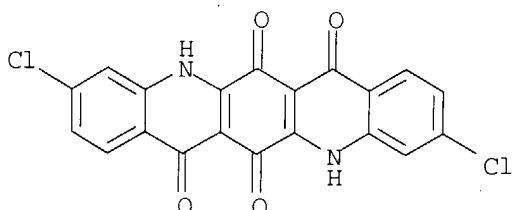
AB The title mixed-crystal green pigments, useful for coloring natural or synthetic materials and lacquers, are prepared by treating mixts. of 99-60 mol% I [R = H, F, Cl, Br, Cl-4 alkyl, CF3, (un)substituted CONH2, NO2; m, n = 1-4], and 1-40 mol% II (R1 = H, F, Cl, Br, Cl-4 alkyl; m, n = 1-4) in the presence of acids. The products give X-ray diffraction patterns which do not show the presence of indigoid compds. in the quinacridonequinone crystal lattice. Thus, quinacridonequinone 15.4, indigo 1.31, and 96% H2SO4 140 parts were dissolved together at 5°, the mixture poured into 1400 parts ice water, and heated for 2 h to 80-90°. The green

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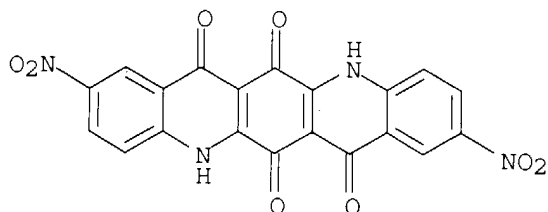
pigment product was washed until neutral and dried at 60°/267 hPa.
IT **1503-48-6DP**, solid solns. with indigoid compds.
2673-04-3DP, solid solns. with indigo **3933-16-2DP**, solid
solns. with indigo
RL: **PREP (Preparation)**
(manufacture of, as green pigments)
RN 1503-48-6 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX
NAME)



RN 2673-04-3 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 3,10-dichloro- (7CI, 8CI,
9CI) (CA INDEX NAME)



RN 3933-16-2 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dinitro- (7CI, 8CI,
9CI) (CA INDEX NAME)



L4 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1984:492902 CAPLUS
DOCUMENT NUMBER: 101:92902
TITLE: Pigmentary form of quinacridone pigments
INVENTOR(S): Jaffe, Edward E.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co. , USA
SOURCE: U.S., 8 pp. Cont.-in-part of U.S. Ser. No. 281,194,
abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent

10/757,306

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4455173	A	19840619	US 1982-368321	19820416
JP 58023858	A2	19830212	JP 1982-116312	19820706
JP 03058389	B4	19910905		
EP 69396	A2	19830112	EP 1982-106079	19820707
EP 69396	A3	19830518		
EP 69396	B1	19860312		

R: CH, DE, FR, GB, IT, LI

PRIORITY APPLN. INFO.: US 1981-281194 19810707
US 1982-368321 19820416

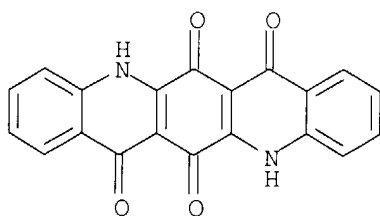
AB Pigment-grade quinacridones are prepared by converting crude quinacridones containing 0-5 weight% of a (phthalimidomethyl)quinacridone to a low-crystallinity aggregate form, milling in a water-miscible liquid which wets the pigment and is effective in improving the crystallinity of quinacridone particles, and recovering the product. Thus, a mixture of 2,9-dimethylquinacridone [980-26-7] 45, quinacridone [1047-16-1] 5, and anhydrous Na₂SO₄ 5 parts was ball milled for 96 h, charged (12 part portions) to 4 ball mills each containing 79 parts acetone [67-64-1], milled for 72 h, treated with steam, cooled to 85°, mixed with 104 parts 33% aqueous H₂SO₄, heated at 80-85° for 1 h, filtered, washed, and dried to give 43.2 parts pigment which, when tested by rubout in a lithog. varnish, was similar in masstone to a com. 2,9-dimethylquinacridone and ≥10% stronger in tinctorial strength.

IT 1503-48-6P

RL: PREP (Preparation)
(pigments, manufacture of)

RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 11 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1981:463682 CAPLUS

DOCUMENT NUMBER: 95:63682

TITLE: Quinacridonequinone and pigment containing it

INVENTOR(S): Maurer, John Frederick

PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA

SOURCE: Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

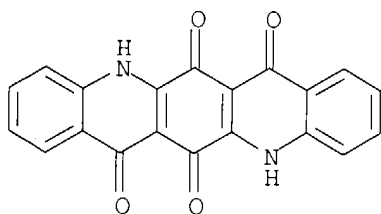
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

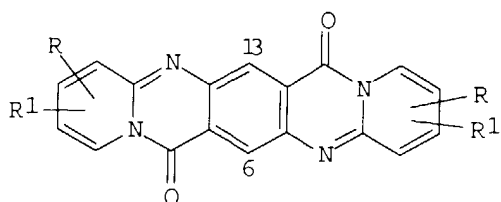
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 24892 A1 19810311 EP 1980-302903 19800821
EP 24892 B1 19830518
R: CH, DE, GB
JP 56034760 A2 19810407 JP 1980-116515 19800826
PRIORITY APPLN. INFO.: US 1979-69865 19790827
AB Quinacridonequinone (I) [1503-48-6] of high purity (>97%) is prepared by oxidizing 6,13-dihydroquinacridone (II) [5862-38-4] with V2O5 and alkali metal chlorate in the presence of H2O as a nucleating agent for I. In this process, a solution of II in aqueous acidic medium is added to a solution of V2O5 in aqueous acidic medium at 75-100°, and an aqueous solution of chlorate is added sep. to the V2O5 solution to regenerate V5+ and generate I nuclei in the reaction medium by controlled addition of H2O. The solns. of II and chlorate are added during ≥2 h, and the total amount of H2O added to the V2O5 solution (exclusive of H2O present in the chlorate and V2O5 solns.) is 9.4-30.4 parts per part II.
IT **1503-48-6P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(pigment, manufacture of, in high purity)
RN 1503-48-6 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 12 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1978:512276 CAPLUS
DOCUMENT NUMBER: 89:112276
TITLE: Studies on heterocyclic coloring matter. Part III.
7a,14a-Diaza-7,7a,14,14a-tetrahydroquino[2,3-b]acridine-7,14-diones (5,7a,12,14a-tetraaza-7,7a,14,14a-tetrahydropentacene-7,14-diones)
AUTHOR(S): Altiparmakian, Rodolf
CORPORATE SOURCE: Dyes Dep.-Dyes Chem. Res., Sandoz Ltd., Basel, Switz.
SOURCE: Helvetica Chimica Acta (1978), 61(3), 1146-57
CODEN: HCACAV; ISSN: 0018-019X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 89:112276
GI



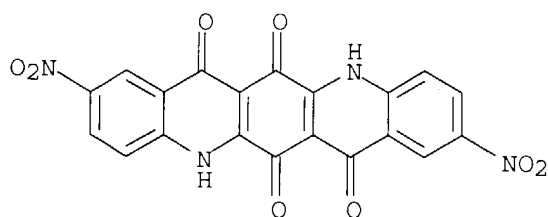
10/757,306

AB The title compds. (I, R = H, Cl, Me; R2 = H, Cl) are prepared by reaction of 2-aminopyridine (II) [504-29-0] or derivative with di-Et 2,5-dioxocyclohexane-1,4-dicarboxylate [787-07-5] to give 7a,14a-diaza-6,7,7a,13,14,14a-hexahydroquino[2,3-b]acridine-7-14-dione [52000-69-8] or derivative followed by aromatization to the tetrahydro derivative [52000-72-3]. Oxidation of I with a mixture of H2SO4 and HNO3 results in the formation of their resp. 6,13-quinones, also obtained from II or derivs. and di-Et 2,5-dichloro-1,4-benzoquinone-3,6-dicarboxylate [2490-58-6]. The chromophore of I is compared with the quinacridone chromophore.

IT **3933-16-2P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)

RN 3933-16-2 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dinitro- (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1978:121751 CAPLUS

DOCUMENT NUMBER: 88:121751

TITLE: Syntheses and properties of aromatic polyaminoquinones prepared from dichloro-substituted quinones, and of cyclization products derived from aromatic poly(aminoquinonecarboxylic acid)

AUTHOR(S): Sato, Yoshikazu; Amemiya, Yasuhiro; Musha, Yoshihiko; Katayama, Masamichi

CORPORATE SOURCE: Coll. Eng., Nihon Univ., Tokyo, Japan

SOURCE: Nihon Daigaku Kogakubu Kiyo, Bunrui A: Kogaku Hen (1976), 17, 141-9

CODEN: NDKADF; ISSN: 0285-6174

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB Dichlorobenzoquinone (I) and aromatic diamines or their dicarboxy derivs. are heated in organic polar solvents such as Me2SO, DMF, and Me2NAC to give polymers. Polymers obtained in Me2SO in high yield were crosslinked and insol. The reactivity of diamines to I decreased in the order of diaminobenzene > bis(4-amino-3-carboxyphenyl) compds. > bis(4-aminophenyl) compds. The heat stability of the polymers decreased with introduction of methylene groups in the main chain and increased after formation of acridone groups through cyclization by CO2H groups ortho to NH2 groups.

IT **29188-72-5P 66027-45-0P**

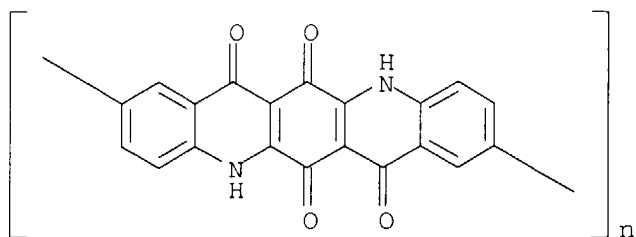
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**

(preparation and properties of)

RN 29188-72-5 CAPLUS

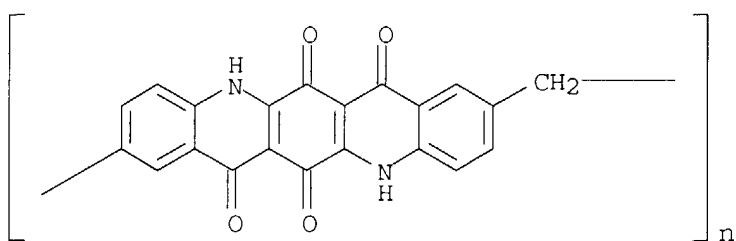
CN Poly(5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxoquino[2,3-b]acridine-2,9-diyl) (8CI, 9CI) (CA INDEX NAME)

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RN 66027-45-0 CAPLUS

CN Poly[(5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxoquino[2,3-b]acridine-2,9-diyl)methylene] (9CI) (CA INDEX NAME)



L4 ANSWER 14 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:469717 CAPLUS

DOCUMENT NUMBER: 87:69717

TITLE: Synthesis of macromolecular compounds with colored monomer units in the chain. Synthesis of copolycondensable dyes derived from quinacridones

AUTHOR(S): Le Pape, Alain; Marechal, Ernest

CORPORATE SOURCE: Oissel, Fr.

SOURCE: Comptes Rendus des Seances de l'Academie des Sciences, Serie C: Sciences Chimiques (1977), 284(16), 619-22

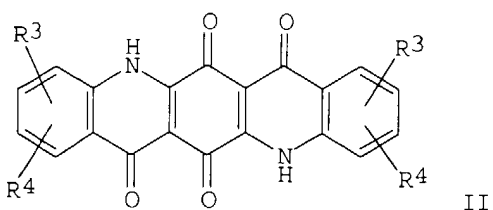
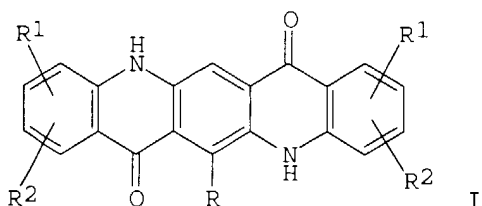
CODEN: CHDCAQ; ISSN: 0567-6541

DOCUMENT TYPE: Journal

LANGUAGE: French

OTHER SOURCE(S): CASREACT 87:69717

GI



10/757,306

AB Quinacridones I (R = H, OH; R1 = OCH2OH, CO2H, Co2CH2CH2OH, CO2Et; R2 = H, Cl) and II [R3 = CO2Et, NHAc, OCH2CH2OH; MeO; R4 = H, Cl, Me, MeO; (R3R4) = benzo] were prepared and were useful as pigments and as copolycondensable dyes with polyester precursors having high thermal stability with good solubility in polyester melts and DMF.

IT 63385-73-9P 63404-65-9P 63404-66-0P

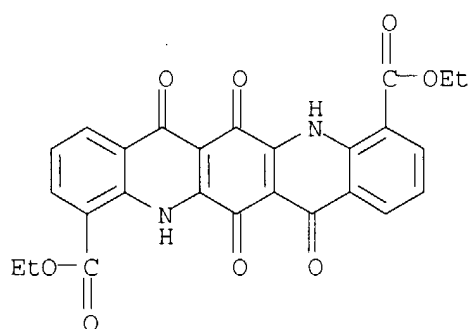
63404-67-1P 63404-69-3P 63404-70-6P

63404-71-7P

RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)

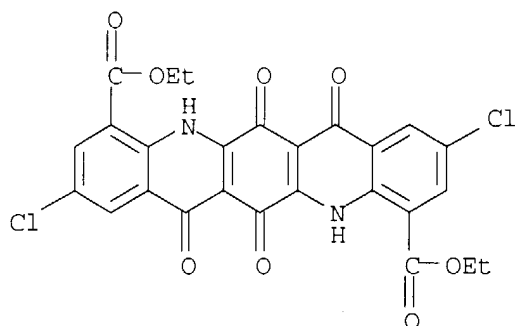
RN 63385-73-9 CAPLUS

CN Quino[2,3-b]acridine-4,11-dicarboxylic acid, 5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxo-, diethyl ester (9CI) (CA INDEX NAME)



RN 63404-65-9 CAPLUS

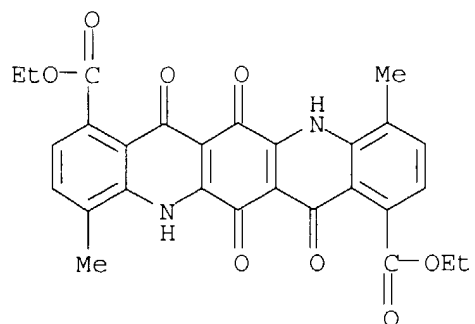
CN Quino[2,3-b]acridine-4,11-dicarboxylic acid, 2,9-dichloro-5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxo-, diethyl ester (9CI) (CA INDEX NAME)



RN 63404-66-0 CAPLUS

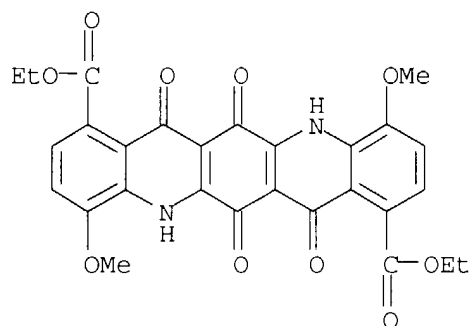
CN Quino[2,3-b]acridine-1,8-dicarboxylic acid, 5,6,7,12,13,14-hexahydro-4,11-dimethyl-6,7,13,14-tetraoxo-, diethyl ester (9CI) (CA INDEX NAME)

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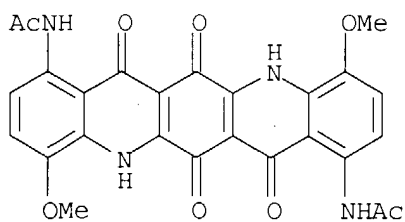
RN 63404-67-1 CAPLUS

CN Quino[2,3-b]acridine-1,8-dicarboxylic acid, 5,6,7,12,13,14-hexahydro-4,11-dimethoxy-6,7,13,14-tetraoxo-, diethyl ester (9CI) (CA INDEX NAME)



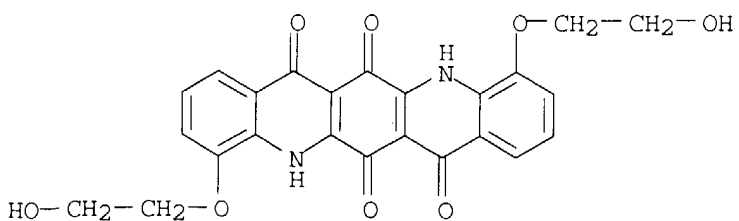
RN 63404-69-3 CAPLUS

CN Acetamide, N,N'-(5,6,7,12,13,14-hexahydro-4,11-dimethoxy-6,7,13,14-tetraoxoquino[2,3-b]acridine-1,8-diyl)bis- (9CI) (CA INDEX NAME)



RN 63404-70-6 CAPLUS

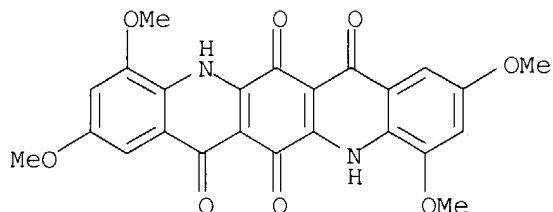
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 4,11-bis(2-hydroxyethoxy)- (9CI) (CA INDEX NAME)



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RN 63404-71-7 CAPLUS

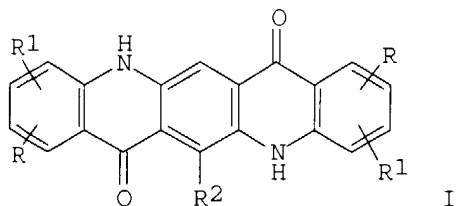
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,4,9,11-trimethoxy- (9CI)
(CA INDEX NAME)



L4 ANSWER 15 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1977:454528 CAPLUS
DOCUMENT NUMBER: 87:54528
TITLE: Quinacridones for dyeing polyesters
INVENTOR(S): Le Pape, Alain
PATENT ASSIGNEE(S): Ugine Kuhlmann, Fr.
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2647425	A1	19770428	DE 1976-2647425	19761020
FR 2328706	A1	19770520	FR 1975-32445	19751023
FR 2328706	B1	19790105		
BR 7606928	A	19770830	BR 1976-6928	19761015
NL 7611637	A	19770426	NL 1976-11637	19761021
BE 847582	A1	19770422	BE 1976-171749	19761022
JP 52084223	A2	19770713	JP 1976-127148	19761022
PRIORITY APPLN. INFO.:			FR 1975-32445	19751023

GI



AB Quinacridones I (R = HOCH₂O, CO₂Et; R₁ = H, Cl; R₂ = H, OH) have high solubility in polyesters and good heat stability, and can be used to color polyester either by mass dyeing or incorporation in the polymer chain. The dyes are prepared by known methods. Thus, condensation of 2,5-dicarbethoxy-1,4-cyclohexanedione [787-07-5] with 4-(hydroxymethoxy)aniline [63266-98-8], alkaline oxidation of the product [63267-06-1], acidification, and cyclization at 100-20° in polyphosphoric acid gave 2,9-bis(hydroxymethoxy)quinacridone (II) [63266-46-6] which dyed polyester violet-red. Copolycondensation of II with di-Me terephthalate and HOCH₂CH₂OH gave a violet-red copolyester

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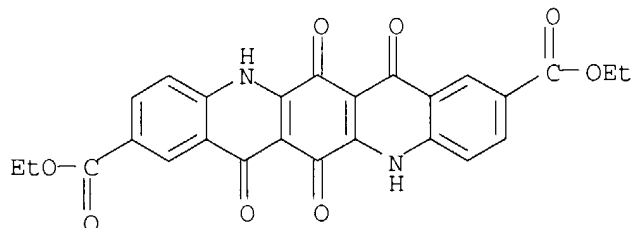
[63266-47-7].

IT **63267-04-9P**

RL: IMF (Industrial manufacture); RCT (Reactant); **PREP**
(**Preparation**); RACT (Reactant or reagent)
(preparation and reduction of)

RN 63267-04-9 CAPLUS

CN Quino[2,3-b]acridine-2,9-dicarboxylic acid, 5,6,7,12,13,14-hexahydro-
6,7,13,14-tetraoxo-, diethyl ester (7CI, 9CI) (CA INDEX NAME)



L4 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1977:454445 CAPLUS

DOCUMENT NUMBER: 87:54445

TITLE: Colored copolyesters

INVENTOR(S): Le Pape, Alain

PATENT ASSIGNEE(S): Uguine Kuhlmann, Fr.

SOURCE: Ger. Offen., 33 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2647426	A1	19770428	DE 1976-2647426	19761020
FR 2328728	A1	19770520	FR 1975-32448	19751023
FR 2328728	B1	19790504		
US 4049376	A	19770920	US 1976-729749	19761006
BR 7606930	A	19770830	BR 1976-6930	19761015
NL 7611638	A	19770426	NL 1976-11638	19761021
BE 847584	A1	19770422	BE 1976-171751	19761022
JP 52084281	A2	19770713	JP 1976-127147	19761022
GB 1528346	A	19781011	GB 1976-43870	19761022
			FR 1975-32448	19751023

PRIORITY APPLN. INFO.:

AB Naphthalimide, quinacridone, naphthoylenebenzimidazole, and dioxazine dyes containing two HOCH₂CH₂, HOCH₂O, or CO₂Et groups are copolycondensed with di-Me terephthalate (I) and HOCH₂CH₂OH (II) to give colored polyesters which can be spun or used for mass dyeing. Thus, I 100, II 100, MeOH 5, and Cd(OAc)₂ 0.04 part was heated to 220° while distilling MeOH, 0.02 part (BuO)₄ Ti and 0.5 part N-(hydroxyethyl)-4-(hydroxyethylamino)-1,8-naphthalimide added, and the mixture heated at 230-40° and finally at 275°/0.05 torr to give copolyester (III) [63410-46-8] m. 255° (pure poly(ethylene terephthalate) m. 254°) which was spun to fluorescent yellow-green yarn with high color fastness. No color change was observed when III was heated under N for 5 h at 280°.

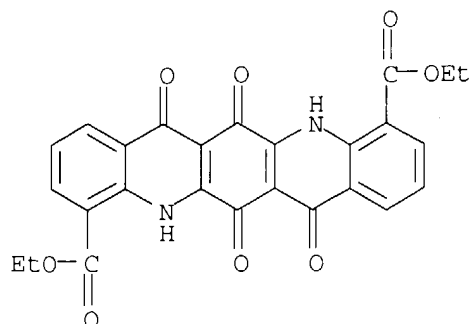
IT **63385-73-9P**

RL: RCT (Reactant); SPN (Synthetic preparation); **PREP**
(**Preparation**); RACT (Reactant or reagent)
(preparation and reduction of)

RN 63385-73-9 CAPLUS

10/757,306

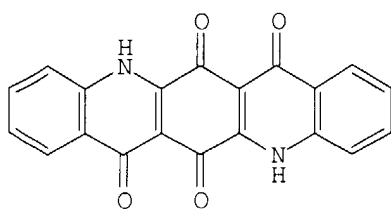
CN Quino[2,3-b]acridine-4,11-dicarboxylic acid, 5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxo-, diethyl ester (9CI) (CA INDEX NAME)



L4 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1977:424788 CAPLUS
DOCUMENT NUMBER: 87:24788
TITLE: Quinacridonequinone by oxidation of dihydroquinacridone
INVENTOR(S): Wriede, Peter Artur
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co., USA
SOURCE: U.S., 3 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4025518	A	19770524	US 1976-659932	19760220
FR 2341579	A1	19770916	FR 1977-4383	19770216
JP 52102333	A2	19770827	JP 1977-15598	19770217
JP 59040169	B4	19840928		
DE 2706795	A1	19770901	DE 1977-2706795	19770217
DE 2706795	C2	19870312		
GB 1573256	A	19800820	GB 1977-6717	19770217
CH 624975	A	19810831	CH 1977-2066	19770218
PRIORITY APPLN. INFO.:			US 1976-659932	19760220

GI



I

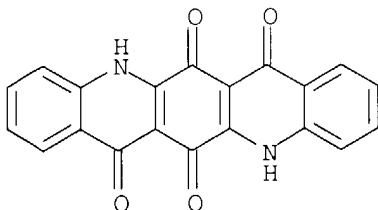
AB Bright yellow quinacridonequinone (I) [1503-48-6] of 95% purity was prepared by oxidizing 6,13-dihydroquinacridone [5862-38-4] with NaClO₄ in an aqueous acidic medium containing a catalytic amount of V₂O₅. The mixture was sprayed with air during the reaction to remove any Cl produced.
IT 1503-48-6P

10/757,306

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(pigment, manufacture of)

RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 18 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1972:541484 CAPLUS

DOCUMENT NUMBER: 77:141484

TITLE: Light-stable orange pigment based on a quinacridone solid solution

INVENTOR(S): Jaffe, Edward E.

PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.

SOURCE: U.S., 2 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3681100	A	19720801	US 1970-79306	19701008
CA 959202	A1	19741217	CA 1971-122856	19710914
DE 2149743	A	19720413	DE 1971-2149743	19711005
DE 2149743	B2	19790517		
DE 2149743	C3	19800110		
JP 54043009	B4	19791218	JP 1971-77987	19711006
FR 2111115	A5	19720602	FR 1971-36146	19711007
BE 773653	A1	19720410	BE 1971-109051	19711008
NL 7113845	A	19720411	NL 1971-13845	19711008
IT 945986	A	19730510	IT 1971-29672	19711008
GB 1335478	A	19731031	GB 1971-46885	19711008
			US 1970-79306	19701008

PRIORITY APPLN. INFO.:

AB The title pigment was prepared by drowning a H₂SO₄ solution of linear quinacridone 44.5, 4,11-dichloroquinacridone 29.7, quinacridonequinone 15.7, and dihydroquinacridone 10g in highly turbulent H₂O, digesting for 1 hr at 90.deg. during which time solid solution formation took place, and then stirring with a surfactant. The dried and pulverized product, particle size 0.02-0.08 μ , is a transparent, lightfast orange pigment for acrylic finishes.

IT **37222-34-7P**

RL: IMF (Industrial manufacture); **PREP (Preparation)**
(preparation of)

RN 37222-34-7 CAPLUS

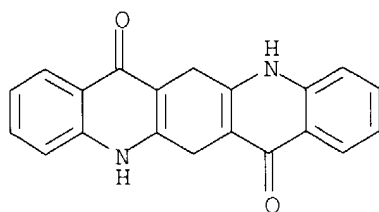
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, mixt. with 4,11-dichloro-5,12-dihydroquino[2,3-b]acridine-7,14-dione, 5,12-dihydroquino[2,3-b]acridine-7,14-dione and 5,6,12,13-tetrahydroquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

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CM 1

CRN 5862-38-4

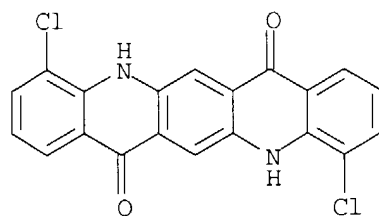
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CM 2

CRN 3089-16-5

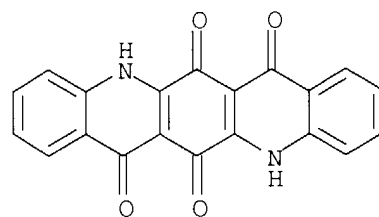
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CM 3

CRN 1503-48-6

CMF C20 H10 N2 O4

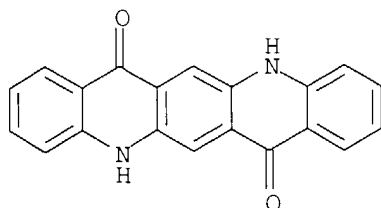


CM 4

CRN 1047-16-1

CMF C20 H12 N2 O2

10/757,306



L4 ANSWER 19 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1972:463345 CAPLUS
DOCUMENT NUMBER: 77:63345
TITLE: Quinacridone pigment
INVENTOR(S): Jaffe, Edward E.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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DE 2149743	A	19720413	DE 1971-2149743	19711005
DE 2149743	B2	19790517		
DE 2149743	C3	19800110		
US 3681100	A	19720801	US 1970-79306	19701008
PRIORITY APPLN. INFO.:			US 1970-79306	19701008

AB A lightfast, moisture-resistant orange pigment (particle size 0.02-0.08 μ) of high transparency and useful in automobile lacquers was prepared by dissolving 6,13-dihydroquinacridone (I) [5862-38-4] 10, 4,11-dichloroquinacridone [3089-16-5] 29.7, quinacridone [1047-16-1] 44.5, and quinacridone quinone [1503-48-6] 15.7 g in 1 kg 96-8% H₂SO₄ at 25-30.deg., spraying the solution into a high-turbulence H₂O stream (the temperature rose to 53.deg.), and heating the suspension 1 hr at 90.deg.. Pigment particles consisting of a solid solution of the 4 components were obtained. The color of an acrylic lacquer containing this pigment showed a higher stability toward weathering than did a control in which I was absent.

IT **37222-34-7P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(preparation of)

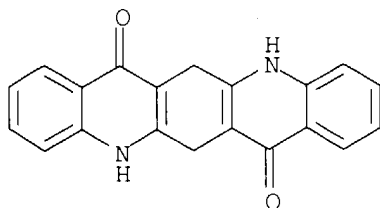
RN 37222-34-7 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, mixt. with 4,11-dichloro-5,12-dihydroquino[2,3-b]acridine-7,14-dione, 5,12-dihydroquino[2,3-b]acridine-7,14-dione and 5,6,12,13-tetrahydroquino[2,3-b]acridine-7,14-dione (9CI) (CA INDEX NAME)

CM 1

CRN 5862-38-4
CMF C20 H14 N2 O2

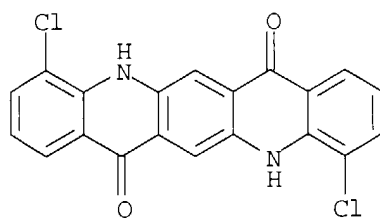
10/757,306



CM 2

CRN 3089-16-5

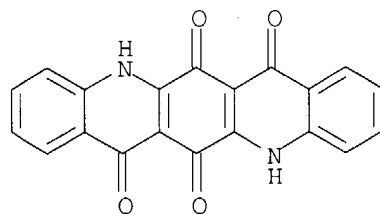
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CM 3

CRN 1503-48-6

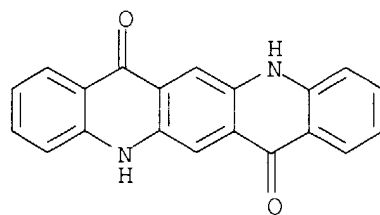
CMF C20 H10 N2 O4



CM 4

CRN 1047-16-1

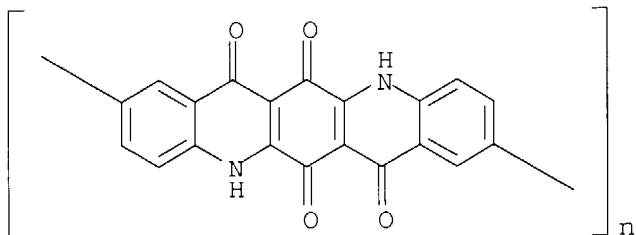
CMF C20 H12 N2 O2



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L4 ANSWER 20 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1970:467228 CAPLUS
DOCUMENT NUMBER: 73:67228
TITLE: Heat-resistant resins from aromatic
diaminodicarboxylates and benzoquinone
INVENTOR(S): Yoda, Naoya; Kurihara, Masaru
PATENT ASSIGNEE(S): Toyo Rayon Co., Ltd.
SOURCE: Jpn. Tokkyo Koho, 6 pp.
CODEN: JAXXAD
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	JP 45011518	B4	19700425	JP	19650830
GI	For diagram(s), see printed CA Issue.				
AB	A mixture of 3,3'-benzidinedicarboxylic acid 136, benzoquinone 123, DMF 300, and AcONa 150 parts was refluxed at 160° for 22 hr to give polymer I in 80% yield, inherent viscosity 0.42 (0.5% in H ₂ SO ₄ , 30°). A mixture of 100 parts I and 1000 parts polyphosphoric acid was heated at 130° for 3-4 hr to give polymer II, II was reduced with 300 parts Sn, poured into 1000 parts water, washed with 1000 parts alkaline EtOH, treated with Na m-nitrobenzenesulfonate, and precipitated to give polyquinacridone III, inherent viscosity 1.86 (0.5% in H ₂ SO ₄ , 25°).				
IT	29188-72-5P RL: PREP (Preparation) (preparation of)				
RN	29188-72-5 CAPLUS				
CN	Poly(5,6,7,12,13,14-hexahydro-6,7,13,14-tetraoxoquino[2,3-b]acridine-2,9-diyl) (8CI, 9CI) (CA INDEX NAME)				



L4 ANSWER 21 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1970:111443 CAPLUS
DOCUMENT NUMBER: 72:111443
TITLE: Quinacridonequinone and quinacridone
INVENTOR(S): Ehrich, Felix F.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.
SOURCE: Fr., 9 pp.
CODEN: FRXXAK
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1580735		19690905		

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DE 1794179
GB 1242895
US 3632588

DE
GB
19720000 US

PRIORITY APPLN. INFO.:

US 19670922

AB Quin-acridinonequinone (I) and quinacridone (II) are formed by oxidation of dihydroquinacridone (III) in aqueous alkaline media by m-O₂NC₆H₄-SO₃ Na (IV) in the presence of m-H₂NC₆H₄SO₃Na (V). For ex-ample, 20 g NaOH was mixed with 113 ml H₂O and stirred 1 hr at 35-40°. To this was added 10 g III. The mixt was refluxed 3 hr, 500 ml H₂O was added, and the mixt was filtered. The precipitate was washed free of base and treated with 175 ml concd

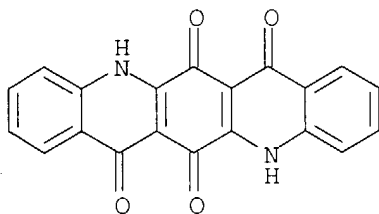
HCl under reflux 0.5 hr to give I and II in a ratio of 6.47:1. In other examples, the proportion of I to II in the product varied from 0.48 from a mixture containing no V to 6.79 from a mixt containing IV and V in a mole ratio of 1:1.1. Total yields were 81-94%.

IT 1503-48-6P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 22 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1967:85708 CAPLUS

DOCUMENT NUMBER: 66:85708

TITLE: Synthesis of 6,13-dihydroquinacridones and their properties

AUTHOR(S): Nagai, Yoshio; Nishi, Hisao; Hasegawa, Kiyoshi

CORPORATE SOURCE: Univ. Tokyo, Tokyo, Japan

SOURCE: Kogyo Kagaku Zasshi (1966), 69(4), 669-74

CODEN: KGKZA7; ISSN: 0368-5462

DOCUMENT TYPE: Journal

LANGUAGE: Japanese

AB The mixture of 0.68 g. quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (I), 3.4 g. P₂O₅, and 4.8 g. 0.5% H₃PO₄ was slowly treated with Sn powder at 130° until the solution changed to gray. The reaction mixture was added to 300 ml. H₂O, 100 ml. HCl added and the mixture heated at 100° for 1 hr. to give 0.62 g. 5,6,12,13 - tetrahydroquino[2,3-b]acridine - 7,14 - dione (II) (EtOH). Similarly, 5,6-dihydroquino[2,3-b]acridine-7,14-dione (III), 2,9-dimethylquino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (IV), and 3,10-dichloroquino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (V) in polyphosphoric acid was reduced with Sn powder to give 5,6,12,13-tetrahydroquino[2,3-b]acridine-7,14-dione (VI), 2,9-dimethyl-5,6,12,13-tetrahydroquino[2,3-b]acridine-7,14-dione (VII), and 3,10-dichloro-5,6,12,13-tetrahydroquino[2,3-b]acridine-7,14-dione, resp. The products were colorless powders, soluble in H₂SO₄ without coloration, but changed to red or brown at higher temperature or in the air.

II

and VII in alkali were treated with organic oxidizing agents to give

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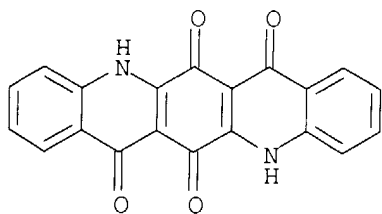
5,12-dihydroquino[2,3-b]acridine-7,14-dione (VIII) and 2,9-dimethyl-5,12-dihydroquino[2,3-b]acridine-7,14-dione (IX), resp. By using inorg. oxidizing agents in acidic solvents, II and III gave I, while VI and IX gave IV, and VII gave V, resp.

IT 1503-48-6P 2673-04-3P 5791-64-0P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

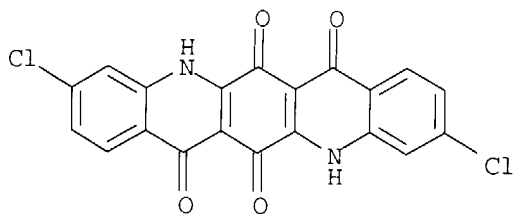
RN 1503-48-6 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone (7CI, 8CI, 9CI) (CA INDEX NAME)



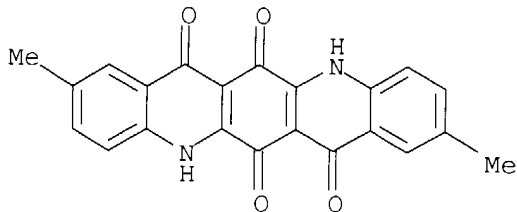
RN 2673-04-3 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 3,10-dichloro- (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 5791-64-0 CAPLUS

CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 2,9-dimethyl- (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1967:11865 CAPLUS
DOCUMENT NUMBER: 66:11865
TITLE: Polychloroquinacridone pigments
INVENTOR(S): Sweet, Ronald L.
PATENT ASSIGNEE(S): du Pont de Nemours, E. I., and Co.
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent

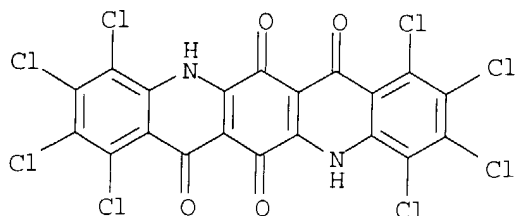
10/757,306

LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3272822		19660913	US	19631015

AB The title compds. are obtained by halogenating in the presence of AlCl_3 or AlBr_3 catalysts. Thus, 15 parts quinacridone (I) is added to 325 parts SCl_2 and 50 parts AlCl_3 at 50° , the mixture is heated to 100° under stirring, kept for 1.5 hrs., poured into water, filtered and the residue purified by treating with 10% NaOH solution to give 26 parts yellowish-red pigment containing 46.1% Cl (7.3 Cl per mol.), bluish green in concentrated H_2SO_4 . Similar reaction using SOCl_2 at 80° as chlorinating agent gave a bluish red product containing 3.4 Cl, green in H_2SO_4 , which was oxidized with CrO_3 to give a dichloroquinacridonequinone. A mixture of 327 parts I, 4860 parts SCl_2 , and 327 parts AlCl_3 was heated to 180° in an autoclave and kept 4 hrs. at 180° , maintaining pressure at 265 psi. by venting. After releasing the pressure, Cl was passed at $>65^\circ$ to remove SCl_2 . Working up gave yellowish red decachloroquinacridone (II), very slightly soluble in concentrated H_2SO_4 (dark green), stable to 370° , turns brown and blackens without melting at 400° , single x-ray diffraction peak, interplanar spacing 3.42 A. A mixture of 100 parts II, and 5600 parts AcOH , was slowly treated with 260 parts CrO_3 in 1000 parts H_2O , boiled for 5 hrs. and filtered to give 88 parts octachloroquinacridonequinone, an intense yellow pigment, orange in H_2SO_4 , also obtained from quinacridonequinone by chlorination. A mixture of 327 parts I, 654 parts AlCl_3 , 2150 parts SOCl_2 and 654 parts Br are heated at 80° in an autoclave for 12 hrs. to give a pigment containing 3.35 and 2.12 Cl per mol.; the product obtained at 120° contained 0.18 Br and 8.7 Cl. A mixture of 225 parts AlCl_3 , 55 parts NaCl , and 30 parts I is heated to 150° , Cl gas is bubbled in vigorously for 1 hr. at $150-80^\circ$, the mixture poured into 118 parts and HCl in 1000 parts H_2O , filtered, washed and dried to give 47.5 parts red pigment having 37.7 % Cl. A mixture of 65% I and 35% on chlorination gave a blue-red pigment having 49.3% Cl. A mixture of I 15, SOCl_2 50, AlBr_3 80, and Br 45 parts kept at 60° for 24 hrs., 45 parts Br added and the mixture kept for 24 hrs. at 60° gave a pigment containing 32% Br. All the pigments show excellent light fastness.

IT **13325-82-1P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(preparation of)
RN 13325-82-1 CAPLUS
CN Quino[2,3-b]acridine-6,7,13,14(5H,12H)-tetrone, 1,2,3,4,8,9,10,11-octachloro- (8Cl) (CA INDEX NAME)



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(FILE 'HOME' ENTERED AT 14:40:28 ON 01 OCT 2004)

10/757,306

FILE 'REGISTRY' ENTERED AT 14:40:49 ON 01 OCT 2004
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L5 0 S QUINACRIDONE/RCT

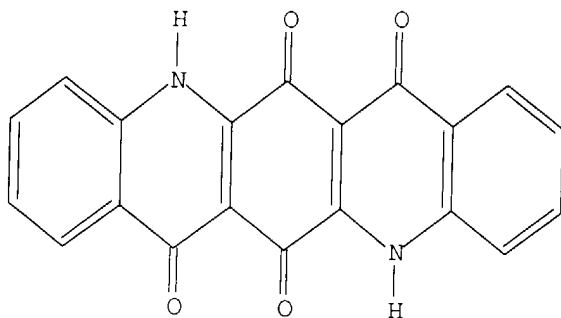
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FILE 'CAPLUS' ENTERED AT 14:43:40 ON 01 OCT 2004
L7 66 S L6/RCT
L8 1 S L4 AND L7

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L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

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